11 pages redacted
Non-Responsive

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Jennison Wright
SF / Tech

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May 18, 1995

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IEPA/DLPC

Mr. Fred Nika
Project Manager
State Sites Management Unit, Bureau of Land
Illinois Environmental Protection Agency
P. O. Box 19276
2200 Churchill Road
Springfield, Illinois 62794-9276

Re: Preliminary Scope of Work and Cost Estimate for Jennison-Wright Remedial Investigation/Feasibility Study.

Dear Fred:

In response to our meeting on May 4, Ecology & Environment, Inc. (E & E) is pleased to provide the Illinois Environmental Protection Agency (IEPA) the attached general scope of work (SOW) and preliminary budget estimate for the remedial investigation/feasibility study (RI/FS) at the Jennison-Wright site in Granite City, Illinois. The attached information represents very preliminary project scoping based upon limited site information, and relies significantly on historical cost data from previous E & E RI/FS projects.

Attachment 1 presents a standard SOW for the RI/FS. The information provided in the SOW is based on previous SOWs for assignments under both IEPA and EPA contracts. As requested, a diskette copy of the SOW also is enclosed.

Attachment 2 outlines the primary assumptions used by E & E in developing the preliminary cost estimate for the RI/FS. This attachment includes a rough approximation of the field investigation/sampling activities expected to be needed to provide adequate data for the risk assessment and feasibility study. It should be noted that more detailed scoping/planning will be required to accurately evaluate the data needs and data quality objectives, as well as potential alternative investigation methods (e.g., field analytical screening). Attachment 3 provides a breakdown of the estimated labor and costs by task and cost element.

If you have any questions concerning this information, please do not hesitate to contact me. I look forward to talking with you soon.

Sincerely,

ECOLOGY AND ENVIRONMENT, INC.

Daniel T. Sewall
Manager, Corporate Projects

cc: B. Schaefer, E & E

DS:XM123_C9546-05/18/95-D1

ATTACHMENT 1

STATEMENT OF WORK FOR CONDUCTING A REMEDIAL INVESTIGATION AND FEASIBILITY STUDY AT THE JENNISON-WRIGHT WOOD-PRESERVING SITE GRANITE CITY, ILLINOIS

This document constitutes the Statement of Work (SOW) to conduct a Remedial Investigation and Feasibility Study (RI/FS) at the Jennison-Wright Wood-Preserving site in Granite City, Illinois. The purpose of this SOW is to provide the direction and intent of the RI/FS. An RI/FS Work Plan shall be developed, which shall provide more detailed guidance on the execution of the RI/FS. The purpose of the RI is to determine the nature and extent of contamination at the Jennison-Wright Wood-Preserving site. The purpose of the FS is to develop and evaluate appropriate remedial action alternatives based on the RI data. All personnel, materials, and services required to perform the RI/FS shall be provided by the contractor.

This SOW generally addresses items needed to fulfill the requirements for an RI/FS. The RI/FS Work Plan to be developed pursuant to the SOW shall recognize the interdependence of the RI and FS. The data collected in the RI influence the development of remedial alternatives in the FS, which in turn affect the data needs and scope of treatability studies and additional field investigations. The United States Environmental Protection Agency's (U.S. EPA's) October 1988 *Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA* should be utilized in the preparation of the Work Plan and the execution of the RI/FS. In the following sections, brief discussions of the major RI/FS tasks are presented.

TASK 1 - WORK PLAN PREPARATION

An RI/FS Work Plan (WP) shall be prepared for the Jennison-Wright Wood-Preserving site and submitted to the Illinois Environmental Protection Agency (IEPA). The WP shall detail the technical approach, personnel requirements, estimated costs, and schedule for each task described in this SOW. Incorporated into the WP shall be several specific plans addressing sampling, quality assurance/quality control (QA/QC), and health and safety. These specific plans are as follows:

Field Sampling Plan: A Field Sampling Plan (FSP) that addresses all data acquisition activities shall be prepared. The plan shall contain a statement of sampling objectives, specification of equipment, required analyses, sample types, sample locations, and frequency. The plan shall address specific hydrologic, hydrogeologic, and air transport characterization methods including, but not limited to, geologic mapping, geophysics, field screening, drilling and well installation, groundwater flow determination, and sampling. The plan shall also identify the data requirements of specific remedial technologies, which may be necessary to evaluate remedial alternatives in the FS. The *Compendium of Superfund Field Operations Methods* (EPA/540/P87/001A, OSWER Directive 9355.0-14, September 1987) shall be utilized in the selection and definition of field methods, sampling procedures, and custody.

Quality Assurance Project Plan: A Quality Assurance Project Plan (QAPP), prepared in accordance with current U.S. EPA guidance documents shall be appended to the FSP. The purpose of the QAPP is to ensure that formal procedures are available for all activities affecting the quality of data collected.

Health and Safety Plan: A Health and Safety Plan (HSP) shall be prepared to address hazards that investigation activities may present to the investigation team and to the surrounding community. The HSP shall conform to applicable regulatory requirements and guidance, including U.S. EPA's *Standard Operating Safety Guides*, and shall detail personnel responsibilities, protective equipment, procedures and protocols, decontamination, and training and medical surveillance as required under 29 CFR 1910.120. The plan shall identify problems or hazards that may be encountered and their solutions. Procedures for protecting third parties, such as visitors or the surrounding community, shall also be provided.

TASK 2 - DOCUMENT REVIEW

The background information pertinent to the site and to environmental concerns shall be reviewed. The data gathered during previous investigations shall be reviewed and evaluated. The existing site information that shall be reviewed by the contractor shall include, but not necessarily be limited to:

- IEPA and U.S. EPA files;
- Aerial photographs;

- County Health Department files;
- Historical water quality data;
- United States Geological Survey and Illinois Geological Survey files.

In addition to this literature search, on-site activities may be used to confirm and/or update certain information. For example, existing monitoring wells may be inspected to determine whether they are functional. Also, the location and status of selected water supply wells may be field-verified. Information and data that are gathered during this task shall be incorporated in the Remedial Investigation Report.

TASK 3 - REMEDIAL INVESTIGATION FIELDWORK

The objectives of the RI are to:

- Quantify the magnitude and extent of contamination at the Jennison-Wright Wood-Preserving site;
- Characterize the hydrogeologic and physical setting to determine the most likely contaminant migration pathways and physical features that could affect potential remedial actions;
- Determine the migration rates, extent, and characteristics of contamination that may be present at the site; and
- Collect data and information to the extent necessary and sufficient to quantify risk to public health and the environment and to support the development and evaluation of viable remedial alternatives in the FS.

Investigations necessary to achieve the above objectives shall be conducted. The investigations shall result in data of adequate technical content to support the development and evaluation of remedial alternatives during the FS. Investigation activities shall focus on problem definition and data to support the screening of remedial technologies, alternative development and screening, and detailed evaluation of alternatives.

The site investigation activities shall follow the plans set forth in Task 1. Sample analyses shall be conducted at laboratories following IEPA protocols or their equivalents. Strict chain-of-custody procedures shall be followed, and all sampling locations shall be shown on a site map. A description of the types of investigations that shall be conducted is presented below.

Source Characterization: An investigation shall be carried out to characterize the physical and chemical aspects of the waste materials remaining at the site. It is anticipated that this information shall be obtained from a combination of existing site information, field inspections, and site sampling activities.

Migration Pathway Assessment: The migration pathways at the Jennison-Wright Wood-Preserving site shall be characterized through the following types of investigations:

- **Hydrogeologic:** A hydrogeologic study shall be performed to further evaluate the subsurface geology and characteristics of the water-bearing formations. This study shall define the site hydrostratigraphy, controlling geologic features, zones of preferential groundwater transmission, and the distribution of hydraulic heads within the water-bearing formations. The results of this study shall be combined with the existing site data and the results of the source characterization to define the groundwater flow patterns and to examine the vertical and lateral extent of contaminant migration.

- **Soils and Sediment:** The physical characteristics of the site soils and sediments shall be evaluated. Some elements of this investigation may overlap with the above-described investigations.

- **Air:** The potential for airborne particle and vapor transport shall be evaluated to determine whether an atmospheric testing program should be initiated in later project stages.

- **Human Populations:** Information shall be collected to identify, enumerate, and characterize human populations potentially exposed to contaminants released from the site. For a potentially exposed population, information shall be collected on population size and location. Special consideration shall be given to identifying potentially sensitive subpopulations such as children, pregnant women, infants, and the chronically ill. The identification of these high-risk subpopulations shall be linked with the potential contaminants of concern to identify how these populations may be at risk.

- **Ecological Investigation:** Biological and ecological information shall be collected for use in the risk assessment. This information will aid in the evaluation of impacts to the environments associated with this site and also help to identify potential effects with regard to the implementation of remedial actions. It is anticipated that this information shall be derived from a combination of existing data and information, and field investigation data.

Contaminant Characterization: Data generated from the Migration Pathway Assessment and Source Characterization shall be used to design an environmental sampling

and analysis program. The objective of this program is to evaluate the extent and magnitude of contaminant migration along the pathways of concern, namely, groundwater and soil at the site.

TASK 4 - RISK ASSESSMENT

A contaminant pathway and transport evaluation and risk assessment shall be prepared describing the specific chemicals at the site and their ambient levels; the number, location, and types of nearby populations; activities and pathways that may result in an actual or potential threat to public health, welfare, or the environment; and a projection of chemical concentrations at the different points of exposure through each medium pathway over the likely period of exposure.

This assessment shall be conducted in accordance with the procedures described in the Risk Assessment Guidance for Superfund, Volume I - Human Health Evaluation Manual (Part A), December 1989, and the *Risk Assessment Guidance for Superfund, Volume II - Environmental Evaluation Manual*, March 1989.

TASK 5 - BENCH/PILOT TESTING STUDIES

If necessary, bench- and pilot-scale testing studies shall be performed to determine the applicability of selected remedial technologies to site specific-conditions. If required, supplements to the appropriate plans (i.e., FSP, QAPP) shall be prepared and submitted to IEPA for review and approval prior to initiation of this task.

TASK 6 - REMEDIAL INVESTIGATION REPORT

The RI report shall characterize the site and summarize data collected and conclusions drawn from the preceding tasks. The report shall be submitted in draft form for review and comment. The report shall thoroughly document the RI. Upon receipt of comments, a draft final report shall be prepared and submitted. The RI report shall not be considered final until a letter of approval is issued by IEPA. A meeting may be scheduled by the IEPA Project Manager to discuss comments on the draft RI.

TASK 7 - DEVELOPMENT OF REMEDIAL ALTERNATIVES

Site-specific objectives of remedial action shall be established for the Jennison-Wright Wood-Preserving site considering the description of the current conditions, information

gathered during the RI, and the requirements of applicable U.S. EPA, federal, and Illinois environmental standards, guidance, and advisories.

These objectives shall specify: the contaminants of concern; exposure routes and receptors; and an acceptable contaminant level or range of levels for each exposure route. Acceptable exposure levels for human health shall be determined on the basis of risk factors and contaminant-specific Applicable or Relevant and Appropriate Regulations (ARARs).

General response actions describing those actions that shall satisfy the remedial action objectives shall then be developed. These may include treatment, excavation, containment, extraction, disposal, institutional actions, or a combination of these actions.

Next, the universe of potentially applicable technology types and process options shall be reduced by evaluating the options with respect to technical implementability. Several broad technology types may be identified for each general response action, and numerous technology process options may exist in each technology type. This screening is accomplished by using readily available information from the RI to screen out technologies and process options that cannot be effectively implemented.

The technology processes considered to be implementable are evaluated in greater detail before selecting one or two processes to represent each technology type. One, or in some cases, two, representative processes will be selected, if possible, of each technology type to simplify the subsequent development and evaluation of alternatives without limiting flexibility during remedial design. Process options are evaluated using effectiveness, implementability, and cost criteria. These criteria are applied only to technologies and the general response actions they are intended to satisfy—not to the site as a whole. Also, the evaluation shall typically focus on the effectiveness factor.

Alternatives shall then be assembled using a combination of general response actions and the process options chosen to represent the various technology types of each medium for the site as a whole. General response actions may be combined to form a range of sitewide alternatives. Alternatives to be developed shall include at least the following:

- Treatment alternatives for source control that eliminate or minimize need of long-term management (including monitoring);
- Alternatives involving treatment as a principal element to reduce the toxicity, mobility, or volume of waste;
- An alternative that involves containment of waste with little or no treatment but provides protection of human health and the environ-

ment primarily by preventing exposure or reducing the mobility of the waste; and

- A no action alternative.

Once alternatives are assembled, the contractor shall prepare an Alternatives Array Document (AAD). The AAD shall contain a detailed description of alternatives (including the extent of remediation, contaminant levels to be addressed, and method of treatment). This document shall also include a brief site history and background, a site characterization that indicates the contaminants of concern, migration pathways, receptors, and other pertinent site information. The AAD shall be submitted to IEPA for review and comment.

Upon approval of the AAD, the contractor shall narrow the list of potential alternatives that shall be evaluated in detail. This screening consists of the following steps:

- The alternatives are further refined as appropriate;
- They are evaluated on a general basis to determine their effectiveness, implementability, and cost; and
- A decision is made, based on this evaluation, as to which alternatives should be retained for further analysis.

Retained alternatives shall then be further defined to form a basis for evaluating and comparing them prior to their screening. Sufficient quantitative information to allow differentiation among alternatives with respect to effectiveness, implementability, and cost is required. Parameters that require additional refinement include the extent or volume of contaminated material and the size of major technology and process options. Information should be developed, as appropriate, for the various technology processes used in each alternative such as size and configuration of on-site extraction and treatment systems or containment structures, and rates or flows of treatment.

Refined alternatives shall then be evaluated against short- and long-term aspects of the three broad criteria: effectiveness, implementability, and cost.

Alternatives with the most favorable composite evaluation of all factors are retained for further consideration during detailed analysis. Alternatives selected shall preserve the range of treatment and containment technologies initially developed plus the no action alternative. A technical memorandum shall be prepared and submitted to IEPA detailing the development and initial screening of remedial alternatives.

TASK 8 - REMEDIAL ALTERNATIVE EVALUATION

The Remedial Alternative Evaluation task is basically a three-stage process consisting of the following steps:

- Detailed development of alternatives;
- Detailed analysis of alternatives; and
- Comparison of alternatives.

Under detailed development of alternatives, each alternative shall be defined in sufficient detail to facilitate subsequent evaluation and comparison. Typically, this activity may involve modification of alternatives based on ARARs, refinement of quantity estimates, technology changes, or site areas to be addressed. Prior to detailed definition, the final list of conceptual alternatives shall be agreed upon by IEPA and the contractor.

Under detailed analysis of alternatives, alternatives shall be evaluated with respect to the following nine criteria:

- Overall protection of human health and the environment;
- Compliance with ARARs;
- Long-term effectiveness and permanence;
- Reduction of toxicity, mobility and volume;
- Short-term effectiveness;
- Implementability;
- Cost;
- State acceptance; and
- Community acceptance.

After each alternative has been individually assessed against each of the nine criteria, a comparative analysis shall be conducted. The purpose of this analysis is to compare the relative performance of each alternative with respect to each specific evaluation criterion. The narrative discussion shall describe the strengths and weaknesses of the alternatives relative to one another with respect to each criterion, and how reasonable variations of key uncertainties could change the expectations of their relative performance. If innovative

technologies are being considered, their potential advantages in cost or performance and the degree of uncertainty in their expected performance (as compared with more demonstrated technologies) shall also be discussed. A summary table should be prepared highlighting the assessment of each alternative with respect to each of the nine criteria.

TASK 9 - FEASIBILITY STUDY REPORT

A Feasibility Study report covering the activities performed and conclusions drawn shall be prepared and a draft report shall be submitted to IEPA for review and comment. A meeting shall be scheduled to discuss IEPA comments, if any, prior to preparation of the final draft report by the contractor. The FS report shall not be considered "draft final" until a letter of approval is issued by the IEPA Project Manager. The approved draft final FS report shall be placed by IEPA in public repositories for public review and comment. Technical memoranda prepared previously shall be summarized and referenced in order to limit the size of the report. However, the report shall completely document the FS.

Following the public comment period, should it be determined (by IEPA) that, based on the public's comments, the RI/FS requires revision, then either the contractor shall prepare and submit to IEPA such a revision, or IEPA may prepare the revision itself.

TASK 10 - POST RI/FS SUPPORT

Technical support activities may be required following the completion of the FS report. These activities may include supporting IEPA in the preparation of the Record of Decision, including the Responsiveness Summary; attending and developing presentation materials for public meetings; and providing technical support in negotiations with responsible parties. [Include assumption on number of labor hours to conduct support activities].

TASK 11 - PROJECT MANAGEMENT

This task shall include developing monthly technical and financial status reports, personnel and resource scheduling, and attending planning or other required meetings.

[INCLUDE DELIVERABLE SCHEDULE HERE]

ATTACHMENT 2

PRIMARY SOW ASSUMPTIONS FOR JENNISON-WRIGHT RI/FS COST ESTIMATE

The cost estimate provided with this scope of work represents a preliminary "budget-level" estimate for task that are typically performed for an RI/FS. A brief review of existing file data and information was used as a basis for developing a preliminary scope of field investigation activities that may be necessary for the Jennison-Wright site. The major assumptions used in developing the cost estimate include the following:

1. For Task 1, Work Plan Preparation, draft and final versions of the Work Plan, Field Sampling Plan (FSP), Quality Assurance Project Plan (QAPP), and Health and Safety Plan will be submitted. Significant revision to these documents is not anticiapted. A kick-off meeting in Springfield to discuss the SOW is included in this task.

2. For Task 2, Document Review, readily available file material will be obtained and reviewed. The estimate for this task includes travel to the site area and Springfield for file review purposes.

3. For Task 3, Field Investigation, the following primary assumptions were used:

   - The field effort will include the installation, development, and sampling of 19 new monitoring wells, including three deep wells (120 feet), 8 intermediate wells (60 feet) and 8 shallow wells (25 feet).

   - A total of 40 subsurface soils samples will be collected for laboratory analysis from 20 shallow borings (20 feet), and 40 surface soil samples will be collected for analysis. Approximately 10 additional miscellaneous samples (concrete surfaces, sediment) were included for estimating purposes.

   - Drilling subcontract costs were estimated to be $79,500 using recent pricing information from an E & E subcontractor. In addition, subcontract costs for site surveying and development of a site topographic base map were estimated at $7,500. The development of bid packages and subcontractor procurement is included in this task.

   - E & E laboratory analytical costs were used in developing the estimate. The total analytical cost estimated for this SOW is $142,050. This cost is based on full TCL/TAL analysis of 23 groundwater samples and 92 soil samples, plus TCLP analysis and indicator/engineering parameter (e.g., physical tests, general chemistry) analysis for a limited number of samples.

   - The field effort is estimated to require three 10-day work shifts to complete. Two of these shifts will be staffed with three people, and one shift will be staffed with four people. All field work will be completed in Level D personal protection.

4. For Task 4, Risk Assessment, baseline human health and ecological assessments will be conducted. The ecological assessment will consist of a preliminary survey and analysis of potential ecological receptors. One meeting in Springfield is included in the estimate to discuss the scope of the risk assessment.

5. For Task 5, Bench/Pilot Testing, the estimated labor and costs represent only the evaluation of the need for treatability tests and development of a conceptual plan for such tests. The type and scope of any treatability studies that may be necessary cannot be estimated at this time.

6. For Task 6, RI Report, draft and final versions of the report will be submitted. The report is expected to follow a standard outline from available EPA guidance documents. Two meetings in Springfield are included in the estimate to discuss the report contents during preparation, and agency comments on the draft report.

7. For Tasks 7 through 9, Feasibility Study, the estimate is based on historical cost data from previous E & E studies. These tasks assume the preparation of an "Alternatives Array Document" to provide preliminary information on the development and screening of remedial action objectives and alternatives, as well as draft and final versions of the FS Report. Two meetings in Springfield are estimated during the course of the FS.

8. For Task 10, Post-RI/FS Support, a total of 80 labor hours plus one meeting in Springfield are included in the estimate. Activities under this task would be performed only at the direction of the IEPA project manager.

9. For Task 11, Project Management, the duration of the project is estimated to be 12 months. Monthly technical and financial status reports will be prepared and submitted to the IEPA project manager.

ATTACHMENT 3

18-May-95

ECOLOGY AND ENVIRONMENT, INC.
ESTIMATED DIRECT HOURS AND COSTS

TASK 1.0: WORK PLAN
TASK 2.0: DOCUMENT REVIEW
TASK 3.0: FIELD INVESTIGATION
TASK 4.0: RISK ASSESSMENT
TASK 5.0: BENCH/PILOT TESTING
TASK 6.0: RI REPORT

Client: IEPA
Jennison-Wright

Rate/Hr	Labor Category		Totals	1.0	2.0	3.0	4.0	5.0	6.0
~~$41.08~~	P-5 42.31		204	24	4	0	32	12	56
~~$34.09~~	P-4 35.11		574	96	12	50	96	24	120
~~$25.32~~	P-3 26.08		1,728	240	48	360	160	40	320
~~$19.83~~	P-2 20.42		3,604	360	84	580	580	0	780
~~$16.12~~	P-1 16.60		1,006	40	0	340	80	0	240
~~$14.69~~	T-2 15.13		0	0	0	0	0	0	0
~~$9.78~~	T-1 10.07		0	0	0	0	0	0	0
~~$10.76~~	Clerical/Secretary 11.08		556	80	16	32	96	12	120
	TOTAL HOURS		7,672	840	164	1,362	1,044	88	1,636
			170,304						
1)	Total Labor Cost		~~$165,367~~	18,980	3,627	28,146	22,462	2,453	35,121
			344,645						
2)	Overhead	202.4%	334,703	38,416	7,341	56,968	45,463	4,965	71,085
3)	Travel		15,887	232	217	12,733	973	227	606
4)	Other Direct Costs		14,000	700	350	10,060	400	70	1,300
5)	E&E Computer Usage		9,010	2,010	0	270	1,215	0	3,085
6)	Subtotal		~~$530,967~~	60,338	11,535	108,177	70,513	7,715	111,197
			553,896						
7)	Subcontractors		87,000	0	0	87,000	0	0	0
8)	Subtotal		~~$625,967~~	60,338	11,535	195,177	70,513	7,715	111,197
			640,896						
9)	E&E Drilling		0	0	0	0	0	0	0
10)	E&E Analytical Services		142,050	0	0	142,050	0	0	0
11)	E&E Equipment Usage		5,000	0	0	5,000	0	0	0
12)	Subtotal		~~$773,017~~	60,338	11,535	342,227	70,513	7,715	111,197
			731,946						
13)	Fixed Fee	73,795 10.0%	~~77,302~~	6,034	1,154	34,223	7,051	772	11,120
14)	TOTAL COST		~~$850,319~~	66,372	12,689	376,450	77,564	8,487	122,317
			806,941						

ATTACHMENT 3 (continued)

18-May-95

ECOLOGY AND ENVIRONMENT, INC.
ESTIMATED DIRECT HOURS AND COSTS

TASK 7.0 : DEV. REMEDIAL ALTS.
TASK 8.0 : REM. ALTS EVALUATION
TASK 9.0 : FS REPORT

TASK 10.0: POST RI/FS SUPPORT
TASK 11.0: PROJECT MANAGEMENT

Client: IEPA
Jennison-Wright

Rate/Hr	Labor Category		7	8	9	10	11
~~$41.08~~	P-5		20	8	32	0	16
~~$34.09~~	P-4		48	16	80	0	32
~~$28.32~~	P-3		80	80	240	40	120
~~$19.85~~	P-2		280	240	620	40	40
~~$16.12~~	P-1		66	120	120	0	0
~~$14.69~~	T-2		0	0	0	0	0
~~$9.78~~	T-1		0	0	0	0	0
~~$10.76~~	Clerical/Secretary		24	0	120	16	40
	TOTAL HOURS		518	464	1,212	96	248
	1) Total Labor Cost		11,358	9,593	25,639	1,978	6,010
	2) Overhead	202.4%	22,989	19,416	51,893	4,003	12,164
	3) Travel		227	0	203	177	292
	4) Other Direct Costs		50	190	600	30	250
	5) E&E Computer Usage		540	270	1,350	0	270
	6) Subtotal		35,164	29,469	79,685	6,188	18,986
	7) Subcontractors		0	0	0	0	0
	8) Subtotal		35,164	29,469	79,685	6,188	18,986
	9) E&E Drilling		0	0	0	0	0
	10) E&E Analytical Services		0	0	0	0	0
	11) E&E Equipment Usage		0	0	0	0	0
	12) Subtotal		35,164	29,469	79,685	6,188	18,986
	13) Fixed Fee	10.0%	3,516	2,947	7,969	619	1,899
	14) TOTAL COST		38,680	32,416	87,654	6,807	20,885